Kokanee
Oncorhynchus nerka

Range:
In North America, kokanee occur from the Klamath River, California to Point Hope, Alaska. Kokanee occur naturally outside North America in Japan and the USSR.

Washington Distribution:
Kokanee occur in many lakes throughout Washington. Some of the larger populations occur in Banks Lake and Loon Lake in eastern Washington and Lake Whatcom in Western Washington (Wydoski and Whitney 1979).

Habitat Requirements:
Kokanee inhabit deep, cool lakes and reservoirs. They inhabit the upper third of the lake's water column and feed primarily on zooplankton and aquatic insect larvae (Scott and Crossman 1973, Wydoski and Whitney 1979). Adult kokanee migrate to tributaries where spawning occurs in redds dug in fine gravel located in clean riffles (Scott and Crossman 1973). Some spawning also occurs along gravel lake shores. Newly emergent fry migrate to the lake where they will live until adults.

Limiting Factors:
The presence or absence of deep cool lakes and associated tributaries are the primary factors which limit the distribution of kokanee. Because spawning occurs in tributaries, high stream temperatures or high sedimentation during spawning, a lack of spawning habitat, and/or a lack of zooplankton in the lake will limit the population and range of kokanee.

Management Recommendations:
The maintenance of riparian vegetation is essential for controlling stream temperature, providing cover, and protecting against lateral erosion. Removal of streamside vegetation lowers canopy density (shading), and increases sedimentation and stream scouring. Increases in solar radiation raises stream temperatures thereby negatively impacting spawning, hatching, and rearing survival. Increased sedimentation contributes to the loss of spawning habitat and decreases the diversity of aquatic invertebrates and other food items (Newbold et al. 1980, Noss 1983, Heede 1985). Buffer zones along stream and lake banks should be at least the width of the height of the tallest tree or 15.2 m (50 ft) whichever is wider. The vegetative buffer will provide erosion control, and maintain natural stream temperatures and diversity of aquatic invertebrates (Meehan et al. 1977, Newbold et al. 1980). In Washington, this can range up to 60 m (200 ft.). This "zone of influence" (Meehan et al. 1977) should be maintained along stream banks which provide kokanee habitat, and any other stream and lake which directly or indirectly influences kokanee. Road construction and maintenance activities should be avoided adjacent to streams with kokanee. In-stream

structures such as bridges, piers, boat ramps, or culverts must not impede the natural movements of kokanee.

References:

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Key Points:

Habitat Requirements:

- Kokanee require a lake environment for most of their lives.
- Tributaries are used for spawning habitat and for newly emerged fry.
- Spawning occurs in redds dug in fine gravel located in clean riffles.
- Newly emergent fry migrate to the lake where they will live until adults.

Management Recommendations:

- Buffer zones of at least the width of the height of the tallest tree (or 15.2 m (50 ft) whichever is wider) should be maintained along stream banks which provide kokanee habitat, and any other stream which directly or indirectly influences kokanee habitat.
- Road construction and maintenance activities should be avoided adjacent to streams which provide kokanee habitat.
- In-stream structures such as bridges, piers, boat ramps, or culverts must not impede the natural movements of kokanee.